**Task**

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**Task 1: Classification performance evaluation [10 marks]**

In this comparative analysis task, you are required to evaluate classification performance of five algorithms on three datasets using Weka.  Load **breast-cancer.arff, diabetes.arff and iris.arff** datasets into Weka one at a time and run each of the below algorithms with their default settings. Then, collect a 10-fold cross-validation classification results for quantitative evaluation.

a. MultilayerPerceptron

b. Naive Bayes

c. J48

d. RandomForest

e. RERTree

You need to write a report that shows performance comparison of these algorithms on the datasets. The report should contain quantitative comparison of classification accuracy in terms of the confusion matrix and other performance metrics used in Weka. Include necessary screenshots, tables, graphs, etc. to make your report comprehensive, and revealing insightful details on the performance comparison.

***Note:****If any of the algorithms are unavailable/non-functional due to version mismatch, then it can be replaced by another classification algorithm from your WEKA distribution with lecturer’s permission.*

**Task 2: Writing exercise [5 marks]**

**Topic: Data mining applications**

In this task, you are required to write a report of ~800 words, describing the recent and exciting developments in any **two** broad application areas of Data Mining of your choice. The report should highlight the current trends, recent developments and other aspects in the application areas of data mining that you have selected.

You are advised to explore relevant blogs, journal articles and online materials on your selected topics. In this report, you should:

* identify the potential benefits of data mining in selected application areas;
* briefly describe what are the recent developments and why you think they are exciting;
* highlight the significance of its implications in terms of business benefits and/or improving quality of life;
* briefly discuss the legal and ethical concerns associated;
* support your response with appropriate examples and APA referencing.